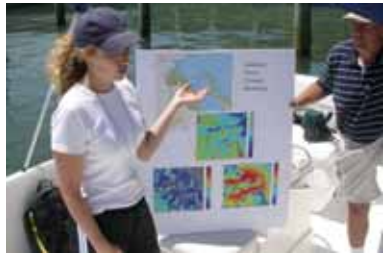
Coastal Geology Research

Research greatly benefits coastal park managers by providing them with information necessary to protect and preserve coastal resources. There are numerous opportunities for scientific research within NPS coastal parks. The relatively unspoiled natural resources found within these areas provide a unique setting for the investigation of coastal features and processes.

The National Park Service is involved in research partnerships with the private sector, universities, and other government agencies. For example, the Geoscientists-in-the-Parks Program places experienced geoscience students and professionals in the parks. More information on this program can be found at: **www2.nature.nps.gov/geology/gip/**

If you are interested in conducting research in the National Parks, or establishing collaborative studies, please visit: **www2.nature.nps.gov/geology/publications/research_factsheet.pdf**
or contact the natural resource manager for the park in which you would like to conduct research.



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www2.nature.nps.gov/geology/coastal

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National Park Service
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Geologic Resources Division

Coastal Geology in the National Parks

The National Park Service Coastal Geology team works to provide effective management of national park coastal resources.

Olympic National Park

Coastal Geology in National Parks

Of the 388 units in the National Park System, 97 have coastal features. These coastal park units, which include National Seashores, Lakeshores, Recreational Areas, Memorials, and Monuments, contain more than 7,300 miles of shoreline and a wide diversity of geological, biological, and cultural resources.

Increasing pressures and environmental threats such as coastal population growth, pollution, habitat encroachment, and shoreline modifications have negatively impacted vital coastal areas. To protect and preserve our national coastal heritage the NPS must have effective coastal zone management policies, a science-based understanding of the resources, and collaborative relationships with other coastal stakeholders.

In 2000, a Coastal Geology team within the NPS Geologic Resources Division, containing both geologic and policy/regulatory expertise, was created to coordinate the specific needs and concerns of coastal park managers and distribute information to benefit and preserve our dynamic coastal environments.

Cover: Dry Tortugas National Park, Florida. View of the coast from Fort Jefferson. Photo by Rebecca Beavers.

NPS Policy for Coastal Park Units

It is NPS policy that natural coastal processes such as erosion, deposition, dune formation, overwash, inlet formation, and shoreline migration be allowed to continue without interference. However, in some cases it may be necessary to manipulate a park's coastal system to preserve or restore specific park resources or to protect park infrastructure, so long as other park resources and values are not impaired. Coastal park developments should also be sustainably designed and evaluated for relocation if damaged or destroyed by natural events.

Management Objectives

- Systematically inventory, monitor, and evaluate shoreline resources and identify and evaluate any issues involving both natural and cultural resources.
- Within NPS units, identify and evaluate the dominant shoreline processes, their seasonal cycles, and natural and human-made shoreline resources.
- Promote and coordinate cooperative multiagency shoreline research in NPS areas.
- Protect significant natural and cultural resources to preserve their scientific, cultural, and historic values.
- Emphasize the need for land-use planning and promote the development of shoreline management plans.
- Develop coastal resource education and interpretation programs for the public.

Educational Outreach

The interactive NPS Coastal Geology Knowledge Center website can be found online at:
www2.nature.nps.gov/views/Index_coastal.htm

Interagency Collaboration

Coastal Vulnerability to Sea-Level Change

The National Park Service is currently working in partnership with the United States Geological Survey (USGS) Coastal and Marine Geology Program to develop a Coastal Vulnerability Index (CVI) for coastal parks. This project reveals which areas of parks are most susceptible to sea-level rise and coastal change by quantitatively analzying multiple variables including geomorphology, coastal slope, relative sea-level change, shoreline accretion/erosion rates, tidal range and wave height. The resulting assessment of future coastal impacts allows park managers to make informed decisions to preserve and protect our nation's coastal parks.

More information about this project can be found at:
woodshole.er.usgs.gov/project-pages/nps-cvi/

Pu'uhonua O Honaunau National Historic Park